No. 27

Panair do Brazil, S.A., Lockheed Constellation L-0-49, PP-PDJ, crashed at Tres Bocas, 12.9 km southwest of Asuncion National Airport, Asuncion, Paraguay, on 16 June 1955. Released by the Directorate General of Civil Aviation, Paraguay.

(Additional comments and findings by Brazil, the State of Registry, have been added as footnotes to the following report released by Paraguay, the State of Occurrence.)

Circumstances

The aircraft was on a scheduled flight from London to Buenos Aires with stops at Paris, Lisbon, Dakar, Recife, Rio de Janeiro, São Paulo and Asuncion, carrying 14 passengers and 10 crew.[1] At 0105 hours (local time) the Constellation called the Asuncion control tower who cleared the flight to land on Runway 02 and requested the aircraft to call when on final approach. The last contact with the flight was made at 0115 hours. From that time on a control tower employee reported the aircraft moved towards the south-southwest. He tried to sight it and noted that it headed towards the city, made a turn to the left and appeared to initiate its final straight-in approach. When sufficient time for a landing had elapsed the employee called attention to the lack of communication between the aircraft and the control tower. He continued to look out to the south where the aircraft would have appeared and saw a sudden burst of flame near the Paraguay Aero Club, south of the airport. Five passengers and three crew members survived. The aircraft was completely destroyed by fire which broke out immediately after impact.

Investigation and Evidence

The weather before the time of the accident was as follows:

0010 partly cloudy, visibility 15 kilometres

0020 wind ESE 8 knots, pressure 1010.2 mbs.

0040 3/8 ST. 170 metres; rain fell for a few minutes just at this time and then ceased completely.

0050 3/8 ST. 170 metres; visibility 15 km; wind ENE 8 - 10 knots, variable.

All information supplied to the aircraft was provided by the Panair do Brazil radio station. It was entirely accurate and in accordance with the records of the equipment at the control tower of Asuncion National Airport.

From an examination of the wreckage and of the path flown by the aircraft, it is presumed that the aircraft was coming down at a landing angle on a track of 30 degrees,[2] crossing the Tres Bocas road at right angles. The place where the crash occurred is at an elevation of 650 feet above sea level. The area is fringed on the southwest with trees 15 metres high and is covered with banana and pineapple plantations.

1) "The flight plan, for the part São Paulo-Asuncion of the flight, was cleared IFR at 5.400 m, off airways, having as alternatives Galeão (Brazil) and Lima (Perú)."

2) "... with a small rate of descent, practically almost in level flight."

The aircraft, coming down at an angle of approximately 5° hit a 12 metre tree with the tip of its left wing, [1] causing a section of the wing 1.5 metres long to break off, [2] continued on the same path until, 50 metres from the first impact, the propeller of one of the engines cut a branch of a tree 8 metres from the ground and several coconut trees were cut down or overturned. The rudder and the vertical stabilizer were found at a point 200 metres from the point of first impact. A one metre section of the right wing tip was found 20 metres further on and a 1.5 metre section of the tail was found to the right of the aircraft path.

The complete nose landing gear[3] was found 350 metres from the point of first impact. Seventy metres further on, but somewhat to the left, was the cockpit with both panels and the entire left landing gear. Approximately 70% of the right wing and its entire aileron were found at the same level but to the right of the path.

Finally, 500 metres from the point of first impact, the aircraft came into violent contact with a tree at ground level, uprooting it, so that the fuselage fell over in a position facing about 30° to the left of the path of flight. At this point the fuselage and left landing gear caught fire.

No. 1 port engine was found 450 metres from the point of first impact and the No. 2 port engine a little further on. The two starboard engines were found nearby, to the left of the fuselage.

The dual wheel of the right landing gear was found without major damage 150 metres from the point of final impact and at approximately 15° from the path of the aircraft.

The co-pilot at the time of the accident stated that the aircraft was making an instrument approach[4] to Runway 02 having been cleared by the tower. He stated that the final approach was being made at 130 knots and the aircraft had been flying in cloud.[5] The altimeter showed 820 feet the last time he looked at the instrument panel. He thought that they had deviated excessively from the approach path owing to the wind which was probably stronger than estimated. Visibility a few seconds before the accident was zero. The aircraft had been functioning normally up until the accident.

The steward remembered that the flight radio operator commented that he had received a radio report that Asuncion was free of cloud and that when the tower was contacted it reported a 300 metre ceiling.

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1) "At this time the flight level of the plane was 195 metres, i.e. below the minimum prescribed flight level, which is 254 metres for an instrument approach on the 02 runway."

2) "The vestiges on the trees indicated that the plane, shortly after losing the wing tip, inclined suddenly towards the left about 28 degrees, and increased substantially the angle of descent."

3) "... the nose wheel hit the ground and caused the nose section to break apart from the fuselage, disconnecting also the instrument panel, the cockpit floor and the pedestal with the engine controls. A little before the nose wheel, engine No. 2 also hit the ground and was disconnected and impelled forward, ..."

"At this time, or a little before, the plane, while sliding on the ground began to rotate around its vertical axis, counter clockwise, and finally came to rest at an angle of 110 degrees."

4) "When the plane was on its final approach track, the co-pilot raised his arm in order to put the landing lights on. At this moment, he heard the pilot say: "Increase power, we are too low." The co-pilot lowered his hands to increase power, glanced at the altimeter which was indicating '247 metres' and at this instant the plane hit the tree."

5) "The pilot told the co-pilot that he would make an outbound track of 1 minute and a half to compensate for the wind."

Another witness stated that the entire area of the accident was obscured by dense clouds.

Probable Cause[1)]

The accident was due to a piloting error in making the approach circuit on instruments. An error in timing resulted in the final approach being initiated at too great a distance from the airport. Proof of this was provided by the fact that the landing gear was found extended, the flaps down, the mixture control set at "rich", all of which indicated that the aircraft was in the ready to land condition.

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1) "The accident was caused by personnel failure: pilot error. The pilot did not follow the recommended procedure for instrument final approach and he descended below the height prescribed in the final approach chart.

Concurring factors were:

1. Flight fatigue, due to excess flight time. The pilot flew in the preceding months an average of 113 hours.
2. The crew did not follow the normal cockpit procedure. The co-pilot did not set his altimeter to the received altimeter setting.
3. Bad layout of the face of the chronometer of the instrument panel, which did make the readings more difficult."

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